

SEQUENCE LISTING

5 <110> Luiten, Rosalie
 Boon-Falleur, Thierry
 van der Bruggen, Pierre
 Stroobant, Vincent
 Demotte, Nathalie
 Schultz, Erwin

10 <120> MAGE ANTIGENIC PEPTIDES WHICH BIND HLA-B35 AND HLA-B44

 <130> L0461/7104

15 <150> US 60/177,242
 <151> 2000-01-20

 <150> US 60/243,212
 <151> 2000-10-25

20 <160> 59

 <170> FastSEQ for Windows Version 3.0

25 <210> 1
 <211> 930
 <212> DNA
 <213> Homo sapiens

30 <400> 1
atgtctttg agcagaggag tctgcactgc aagcctgagg aagcccttga ggcccaacaa 60
gaggccctgg gcctgggtgtg tgtgcaggct gccacctcct ctcctctcc tctggctctg 120
ggcacccctgg aggaggtgcc cactgctggg tcaacagatc ctccccagag tcctcaggga 180
gcctccgcct ttcccactac catcaacttc actcgacaga ggcaacccag tgagggttcc 240
agcagccgtg aagaggaggg gccaagcacc tcttgatattc tggagtcctt gttccgagca 300
35 gtaatcacta agaagggtggc tgattgggtt ggaaaaatc tcctcaaata tggagccagg 360
gagccagtca caaaggcaga aatgctggag agtgtcatca aaaattacaa gcactgtttt 420
ccttagatct tcggcaaagg ctctgagtc ttgcagctgg tctttggcat tgacgtgaag 480
gaagcagacc ccaccggcca ctcctatgtc cttgtcacct gcctaggtct ctcctatgt 540
ggcctgtctgg gtgataatca gatcatgccc aagacaggtc tcctgataat tgcctgttc 600
40 atgattcaa tggagggcgg ccatgctcct gaggagaaa tctggagga gctgagtg 660
atggagggtgt atgatggggag ggagcacagt gcctatgggg agccaggg auctgctcacc 720
caagatttgg tgaggaaaa gtacctggag taccggcagg tgccggacag tgatcccgca 780
cgcttatgagt tcctgtgggg tccaaaggccc ctcgctgaaa ccagctatgt gaaagtcc 840
45 gagttatgtga tcaagggtcag tgcaagagtt cgcttttct tcccatccct gcgtgaagca 900
gctttgagag aggaggaaga gggagtcga 930

 <210> 2
 <211> 309
 <212> PRT
50 <213> Homo sapiens

 <400> 2
Met Ser Leu Glu Gln Arg Ser Leu His Cys Lys Pro Glu Glu Ala Leu 15
 1 5 10 15
55 Glu Ala Gln Gln Glu Ala Leu Gly Leu Val Cys Val Gln Ala Ala Thr 30
 20 25 30
 Ser Ser Ser Pro Leu Val Leu Gly Thr Leu Glu Glu Val Pro Thr 45
 35 40 45
 Ala Gly Ser Thr Asp Pro Pro Gln Ser Pro Gln Gly Ala Ser Ala Phe 60
 50 55 60
60 Pro Thr Thr Ile Asn Phe Thr Arg Gln Arg Gln Pro Ser Glu Gly Ser 80
 65 70 75 80

Ser Ser Arg Glu Glu Gly Pro Ser Thr Ser Cys Ile Leu Glu Ser
85 90 95
Leu Phe Arg Ala Val Ile Thr Lys Lys Val Ala Asp Leu Val Gly Phe
100 105 110
5 Leu Leu Leu Lys Tyr Arg Ala Arg Glu Pro Val Thr Lys Ala Glu Met
115 120 125
Leu Glu Ser Val Ile Lys Asn Tyr Lys His Cys Phe Pro Glu Ile Phe
130 135 140
Gly Lys Ala Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys
145 150 155 160
10 Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val Thr Cys Leu Gly
165 170 175
Leu Ser Tyr Asp Gly Leu Leu Gly Asp Asn Gln Ile Met Pro Lys Thr
180 185 190
15 Gly Phe Leu Ile Ile Val Leu Val Met Ile Ala Met Glu Gly Gly His
195 200 205
Ala Pro Glu Glu Glu Ile Trp Glu Glu Leu Ser Val Met Glu Val Tyr
210 215 220
Asp Gly Arg Glu His Ser Ala Tyr Gly Glu Pro Arg Lys Leu Leu Thr
225 230 235 240
20 Gln Asp Leu Val Gln Glu Lys Tyr Leu Glu Tyr Arg Gln Val Pro Asp
245 250 255
Ser Asp Pro Ala Arg Tyr Glu Phe Leu Trp Gly Pro Arg Ala Leu Ala
260 265 270
25 Glu Thr Ser Tyr Val Lys Val Leu Glu Tyr Val Ile Lys Val Ser Ala
275 280 285
Arg Val Arg Phe Phe Pro Ser Leu Arg Glu Ala Ala Leu Arg Glu
290 295 300
Glu Glu Glu Gly Val
30 305

<210> 3

<211> 31

<212> DNA

35 <213> Homo sapiens

<400> 3

aaactgcaga tgtctttga gcagaggagt c

31

40 <210> 4

<211> 30

<212> DNA

<213> Homo sapiens

45 <400> 4

aaactgcagt cagactccct cttccttc

30

<210> 5

<211> 12

50 <212> PRT

<213> Homo sapiens

<400> 5

Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val

55 1 5 10

<210> 6

<211> 10

<212> PRT

60 <213> Homo sapiens

<400> 6

Asp Pro Thr Gly His Ser Tyr Val Leu Val
1 5 10

5 <210> 7
<211> 9
<212> PRT
<213> Homo sapiens

10 Asp Pro Thr Gly His Ser Tyr Val Leu
1 5

15 <210> 8
<211> 9
<212> PRT
<213> Homo sapiens

20 Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5

25 <210> 9
<211> 10
<212> PRT
<213> Homo sapiens

30 <400> 9
Lys Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

35 <210> 10
<211> 8
<212> PRT
<213> Homo sapiens

40 <400> 10
Ala Asp Pro Thr Gly His Ser Tyr
1 5

45 <210> 11
<211> 72
<212> DNA
<213> Homo sapiens

50 atgtctgagt ccttgagct ggtcttggc attgacgtga aggaagcaga ccccacccgc
cactcctatt ga 60
<210> 12
<211> 23
<212> PRT
<213> Homo sapiens

55 <400> 12
Met Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys Glu Ala
1 5 10 15

Asp Pro Thr Gly His Ser Tyr
20

60 <210> 13
<211> 33
<212> DNA

<213> Homo sapiens

<400> 13

atggaaagcag accccacccgg ccactcctat tga

33

5

<210> 14

<211> 10

<212> PRT

<213> Homo sapiens

10

<400> 14

Met Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

15

<210> 15

<211> 30

<212> DNA

<213> Homo sapiens

20

<400> 15

atggcagacc ccacccggcca ctcctattga

30

<210> 16

<211> 9

<212> PRT

<213> Homo sapiens

<400> 16
Met Ala Asp Pro Thr Gly His Ser Tyr
1 5

30

<210> 17

<211> 9

<212> PRT

<213> Homo sapiens

<400> 17
Ser Ala Tyr Gly Glu Pro Arg Lys Leu
1 5

40

<210> 18

<211> 9

<212> PRT

<213> Homo sapiens

45

<400> 18

Glu Val Asp Pro Ile Gly His Leu Tyr
1 5

50

<210> 19

<211> 9

<212> PRT

<213> Homo sapiens

55

<400> 19

Phe Leu Trp Gly Pro Arg Ala Leu Val
1 5

60

<210> 20

<211> 10

<212> PRT

<213> Homo sapiens

<400> 20
Met Glu Val Asp Pro Ile Gly His Leu Tyr
1 5 10

5 <210> 21
<211> 9
<212> PRT
<213> Homo sapiens

10 <400> 21
Ala Ala Arg Ala Val Phe Leu Ala Leu
1 5 10

15 <210> 22
<211> 8
<212> PRT
<213> Homo sapiens

20 <400> 22
Tyr Arg Pro Arg Pro Arg Arg Tyr
1 5 10

25 <210> 23
<211> 10
<212> PRT
<213> Homo sapiens

30 <400> 23
Ser Pro Ser Ser Asn Arg Ile Arg Asn Thr
1 5 10

35 <210> 24
<211> 9
<212> PRT
<213> Homo sapiens

40 <400> 24
Val Leu Pro Asp Val Phe Ile Arg Cys
1 5 10

45 <210> 25
<211> 10
<212> PRT
<213> Homo sapiens

50 <400> 25
Val Leu Pro Asp Val Phe Ile Arg Cys Val
1 5 10

55 <210> 26
<211> 9
<212> PRT
<213> Homo sapiens

55 <400> 26
Glu Glu Lys Leu Ile Val Val Leu Phe
1 5 10

60 <210> 27
<211> 9
<212> PRT

<213> Homo sapiens

<400> 27

Glu Glu Lys Leu Ser Val Val Leu Phe
5 1 5

<210> 28

<211> 10

<212> PRT

10 <213> Homo sapiens

<400> 28

Ala Cys Asp Pro His Ser Gly His Phe Val
1 5 10

15 <210> 29

<211> 10

<212> PRT

20 <213> Homo sapiens

<400> 29

Ala Arg Asp Pro His Ser Gly His Phe Val
1 5 10

25 <210> 30

<211> 9

<212> PRT

<213> Homo sapiens

30 <400> 30

Ser Tyr Leu Asp Ser Gly Ile His Phe
1 5

<210> 31

<211> 9

<212> PRT

35 <213> Homo sapiens

<400> 31

Ser Tyr Leu Asp Ser Gly Ile His Ser
1 5

<210> 32

<211> 9

<212> PRT

45 <213> Homo sapiens

<400> 32

Met Leu Leu Ala Val Leu Tyr Cys Leu
50 1 5

<210> 33

<211> 9

<212> PRT

55 <213> Homo sapiens

<400> 33

Tyr Met Asn Gly Thr Met Ser Gln Val
1 5

60 <210> 34

<211> 9

<212> PRT
<213> Homo sapiens

5 Ala Phe Leu Pro Trp His Arg Leu Phe
1 5

10 <210> 35
<211> 9
<212> PRT
<213> Homo sapiens

15 <400> 35
Ser Glu Ile Trp Arg Asp Ile Asp Phe
1 5

20 <210> 36
<211> 9
<212> PRT
<213> Homo sapiens

25 <400> 36
Tyr Glu Ile Trp Arg Asp Ile Asp Phe
1 5

30 <210> 37
<211> 15
<212> PRT
<213> Homo sapiens

35 <400> 37
Gln Asn Ile Leu Leu Ser Asn Ala Pro Leu Gly Pro Gln Phe Pro
1 5 10 15

40 <210> 38
Asp Tyr Ser Tyr Leu Gln Asp Ser Asp Pro Asp Ser Phe Gln Asp
1 5 10 15

45 <210> 39
<211> 10
<212> PRT
<213> Homo sapiens

50 <400> 39
Glu Ala Ala Gly Ile Gly Ile Leu Thr Val
1 5 10

55 <210> 40
<211> 9
<212> PRT
<213> Homo sapiens

60 <400> 40
Ala Ala Gly Ile Gly Ile Leu Thr Val
1 5

<210> 41

<211> 9
<212> PRT
<213> Homo sapiens

5 <400> 41
Ile Leu Thr Val Ile Leu Gly Val Leu
1 5

10 <210> 42
<211> 9
<212> PRT
<213> Homo sapiens

15 <400> 42
Lys Thr Trp Gly Gln Tyr Trp Gln Val
1 5

20 <210> 43
<211> 9
<212> PRT
<213> Homo sapiens

25 <400> 43
Ile Thr Asp Gln Val Pro Phe Ser Val
1 5

30 <210> 44
<211> 9
<212> PRT
<213> Homo sapiens

35 <400> 44
Tyr Leu Glu Pro Gly Pro Val Thr Ala
1 5

40 <210> 45
<211> 10
<212> PRT
<213> Homo sapiens

45 <400> 45
Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu
1 5 10

50 <210> 46
<211> 10
<212> PRT
<213> Homo sapiens

55 <400> 46
Val Leu Tyr Arg Tyr Gly Ser Phe Ser Val
1 5 10

60 <210> 47
<211> 9
<212> PRT
<213> Homo sapiens

<400> 47
Leu Tyr Val Asp Ser Leu Phe Phe Leu
1 5

<210> 48
<211> 12
<212> PRT
<213> Homo sapiens

5 <400> 48
Lys Ile Ser Gly Gly Pro Arg Ile Ser Tyr Pro Leu
1 5 10

10 <210> 49
<211> 9
<212> PRT
<213> Homo sapiens

15 <400> 49
Tyr Met Asp Gly Thr Met Ser Gln Val
1 5

20 <210> 50
<211> 11
<212> PRT
<213> Homo sapiens

25 <400> 50
Ser Leu Leu Met Trp Ile Thr Gln Cys Phe Leu
1 5 10

30 <210> 51
<211> 9
<212> PRT
<213> Homo sapiens

35 <400> 51
Ser Leu Leu Met Trp Ile Thr Gln Cys
1 5

40 <210> 52
<211> 9
<212> PRT
<213> Homo sapiens

45 <400> 52
Gln Leu Ser Leu Leu Met Trp Ile Thr
1 5

50 <210> 53
<211> 10
<212> PRT
<213> Homo sapiens

55 <400> 53
Xaa Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

60 <210> 54
<211> 945
<212> DNA
<213> Homo sapiens

<400> 54
atgcctttg accagaggag tcagcactgc aagcctgaag aaggccttga ggccccggaga 60
gaggccctgg gcctggggg tgcgcaaggct cctgctactg aggagcagga ggctgcctcc 120

| | | |
|----|--|-----|
| | tccttttcta ctctagttga agtcaccctg ggggagggtgc ctgctgccga gtcaccagat | 180 |
| | cctcccaaga gtccctcaggc agcctccagc cttcccacta ccatgaacta ccctctctgg | 240 |
| | agccaatcc atgaggactc cagcaaccaa gaagaggagg ggccaagcac cttccctgac | 300 |
| 5 | ctggagttcg agtccaagc agcactcagt aggaagggtgg ccgagttgg tcatatttctg | 360 |
| | ctcctcaagt atcgagccag ggagccgtc acaaaggcag aaatgctggg gagtgctgtc | 420 |
| | ggaaattggc agtatttctt tcctgtgatc tttagccaaag cttccagttc cttgcagctg | 480 |
| | gtcttggca tcgagctgtat ggaagtggac cccatcggcc acttgtacat ctttgccacc | 540 |
| | tgcctggcc tctctacga tggcctgtg ggtgacaatc agatcatgcc caaggcaggc | 600 |
| 10 | ctcctgataa tcgtcctggc cataatcgca agagagggcg actgtgcccc tgaggagaaa | 660 |
| | atctggagg agctgagtgt gtttaggggtg ttttaggggg gggaaagacag tatcttgggg | 720 |
| | gatcccaaga agctgctcac ccaacatttc gtgcaggaaa actacctgga gtaccggcag | 780 |
| | gtccccggca gtgatcctgc atgttatgaa ttctgtggg gtccaaaggc cctcggtgaa | 840 |
| | accagctatg tgaaagtccct gcaccatatg gtaaagatca gtggaggacc tcacatttcc | 900 |
| | tacccacccc tgcattgatg ggttttgaga gagggggaaag agtga | 945 |
| 15 | <210> 55 | |
| | <211> 314 | |
| | <212> PRT | |
| | <213> Homo sapiens | |
| 20 | <400> 55 | |
| | Met Pro Leu Glu Gln Arg Ser Gln His Cys Lys Pro Glu Glu Gly Leu | |
| | 1 5 10 15 | |
| 25 | Glu Ala Arg Gly Glu Ala Leu Gly Leu Val Gly Ala Gln Ala Pro Ala | |
| | 20 25 30 | |
| | Thr Glu Glu Gln Glu Ala Ala Ser Ser Ser Ser Thr Leu Val Glu Val | |
| | 35 40 45 | |
| 30 | Thr Leu Gly Glu Val Pro Ala Ala Glu Ser Pro Asp Pro Pro Gln Ser | |
| | 50 55 60 | |
| | Pro Gln Gly Ala Ser Ser Leu Pro Thr Thr Met Asn Tyr Pro Leu Trp | |
| | 65 70 75 80 | |
| | Ser Gln Ser Tyr Glu Asp Ser Ser Asn Gln Glu Glu Gly Pro Ser | |
| | 85 90 95 | |
| 35 | Thr Phe Pro Asp Leu Glu Ser Glu Phe Gln Ala Ala Leu Ser Arg Lys | |
| | 100 105 110 | |
| | Val Ala Glu Leu Val His Phe Leu Leu Leu Lys Tyr Arg Ala Arg Glu | |
| | 115 120 125 | |
| 40 | Pro Val Thr Lys Ala Glu Met Leu Gly Ser Val Val Gly Asn Trp Gln | |
| | 130 135 140 | |
| | Tyr Phe Phe Pro Val Ile Phe Ser Lys Ala Ser Ser Ser Leu Gln Leu | |
| | 145 150 155 160 | |
| | Val Phe Gly Ile Glu Leu Met Glu Val Asp Pro Ile Gly His Leu Tyr | |
| | 165 170 175 | |
| 45 | Ile Phe Ala Thr Cys Leu Gly Leu Ser Tyr Asp Gly Leu Leu Gly Asp | |
| | 180 185 190 | |
| | Asn Gln Ile Met Pro Lys Ala Gly Leu Leu Ile Ile Val Leu Ala Ile | |
| | 195 200 205 | |
| | Ile Ala Arg Glu Gly Asp Cys Ala Pro Glu Glu Lys Ile Trp Glu Glu | |
| 50 | 210 215 220 | |
| | Leu Ser Val Leu Glu Val Phe Glu Gly Arg Glu Asp Ser Ile Leu Gly | |
| | 225 230 235 240 | |
| | Asp Pro Lys Lys Leu Leu Thr Gln His Phe Val Gln Glu Asn Tyr Leu | |
| | 245 250 255 | |
| 55 | Glu Tyr Arg Gln Val Pro Gly Ser Asp Pro Ala Cys Tyr Glu Phe Leu | |
| | 260 265 270 | |
| | Trp Gly Pro Arg Ala Leu Val Glu Thr Ser Tyr Val Lys Val Leu His | |
| | 275 280 285 | |
| | His Met Val Lys Ile Ser Gly Gly Pro His Ile Ser Tyr Pro Pro Leu | |
| 60 | 290 295 300 | |
| | His Glu Trp Val Leu Arg Glu Gly Glu Glu | |
| | 305 310 | |

5 <210> 56
 <211> 9
 <212> PRT
 <213> Homo sapiens

10 <400> 56
Glu Val Asp Pro Ile Gly His Leu Tyr
 1 5

15 <210> 57
 <211> 16
 <212> PRT
 <213> Homo sapiens

20 <400> 57
Met Glu Val Asp Pro Ile Gly His Leu Tyr Ile Phe Ala Cys Thr Leu
 1 5 10 15

25 <210> 58
 <211> 9
 <212> PRT
 <213> Homo sapiens

30 <400> 58
Asp Pro Ile Gly His Leu Tyr Ile Phe
 1 5

35 <210> 59
 <211> 10
 <212> PRT
 <213> Homo sapiens

 <400> 59
Met Glu Val Asp Pro Ile Gly His Leu Tyr
 1 5 10